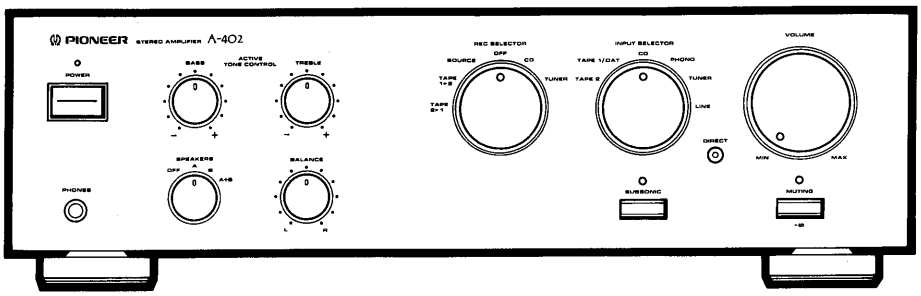
Operating Instructions

STEREO AMPLIFIER

A-402
A-302



The illustration shows model A-402.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

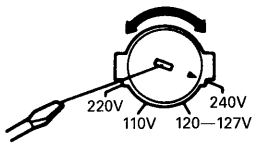
Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

LINE VOLTAGE SELECTOR SWITCH

Only multi-voltage models are provided with this switch. U.S., Canadian, European, U.K., and Australian models are not provided with this switch.
Main voltages in Saudi Arabia are 127 V and 220 V only. Never use this model with 110 V setting in Saudi Arabia.
The line voltage selector switch is on the rear panel. Before your model is shipped from the factory, this switch is set to the power requirements of the destination. Check that it is set properly before plugging the power cord into the AC wall socket. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switch as follows.

1. Use a medium-size screwdriver.
2. Insert the screwdriver into the groove on the voltage selector, and adjust so that the tip of the arrow points to the voltage value of your area.

VOLTAGE SELECTOR



Medium-size screwdriver

IMPORTANT

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

PIONEER®
The Art of Entertainment

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FEATURES

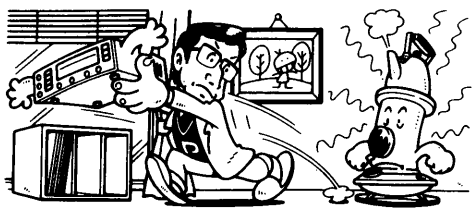
- Drive capacity 80 W + 80 W/4 Ω matching to high power and low impedance type speaker system.
  [model A-302 ..... 50 W + 50 W/4 Ω]
- Super Linear Circuit is employed to realize high-quality sound with minimum distortion.
- The use of a DIRECT circuit ensures high fidelity playback of consistent frequency characteristics, with maximum clarity.
- Clean ground technology prevents noise on power line from flowing to the signal ground line, permitting clean sound reproduction.
- Uses Channel Separation Enhancer Circuit to improve the stereo sound field and sound quality.
- REC selector switch makes tape editing very simple.
- Honeycomb Chassis, Honeycomb Heat Sink. (Thorough anti-vibration construction).
- Uses a complementary capacitor pair.

INSTALLATION

LOCATION

Install the unit in a well-ventilated location where it will not be exposed to high temperature or humidity.

Do not install the unit in a location which is exposed to direct sunlight, or near hot appliances or radiators. Excessive heat can adversely affect the cabinet and internal components. Installation of the unit in a damp or dusty environment may result in malfunction or accident. (Also, avoid installation near cookers, etc., where the unit may be exposed to smoke from oil, steam or heat.)



CONDENSATION

When this unit is brought into a warm room from previously cold surroundings or when the room temperature rises sharply, condensation may form inside, and the unit may not be able to attain its full performance. If this occurs, allow the unit to stand for about an hour or raise the room temperature gradually.

POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

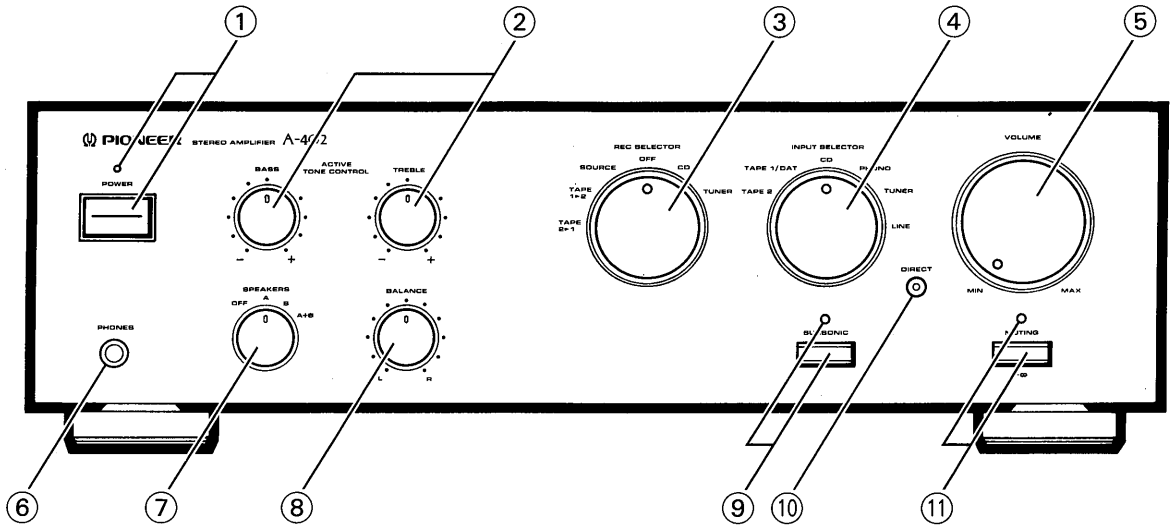
MAINTENANCE OF EXTERNAL SURFACES

- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzine, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.

PANEL FACILITIES

[FRONT PANEL]

The illustration shows model A-402.
Model A-302 is not equipped with ⑨ and ⑪.



① POWER switch/indicator

Press to turn power to the unit on and off.
When the power is on, the indicator lights.

② ACTIVE TONE CONTROL

Ordinarily, the more the volume control is turned down, the more obvious the loudness characteristics become. Since the effects of this unit's tone control settings are increasingly emphasized as the volume is turned down, you can obtain the same kind of effect as loudness characteristics by using suitable tone control settings.

TREBLE tone control

Use to adjust the high-frequency tone at low volume level. The center position is the flat (normal) position. When turned to the right, high-frequency tones are emphasized; when turned to the left, high-frequency tones are de-emphasized.

NOTE:

- *This control does not operate when DIRECT switch is in the on position.*
- *At volume levels below the 10 o'clock position, the set tone control effect is obtained.*
  At volume levels above the 10 o'clock position, the effect becomes increasingly weaker.

BASS tone control

Use to adjust the low-frequency tone at low volume level. The center position is the flat (normal) position. When turned to the right, low-frequency tones are emphasized; when turned to the left, low-frequency tones are de-emphasized.

NOTE:

- *This control does not operate when DIRECT switch is in the on position.*
- *At volume levels below the 10 o'clock position, the set tone control effect is obtained.*
  At volume levels above the 10 o'clock position, the effect becomes increasingly weaker.

③ REC SELECTOR switch

When this switch is set to a position other than SOURCE or OFF, the equipment selected by REC SELECTOR switch can be recorded from, irrespective of the settings of INPUT SELECTOR and DIRECT switches.

TUNER:
To record from the equipment connected to TUNER terminals.
CD:
To record from the equipment connected to CD terminals.
OFF:
In this position, nothing from REC terminals of TAPE 1/DAT and TAPE 2 is output. Set to this position when not recording; the cassette deck will be disconnected, improving sound quality.
SOURCE:
To record from the equipment selected by INPUT SELECTOR switch.
TAPE:
1 ► 2:
To record (copy) from the cassette deck of TAPE 1/DAT terminals, to the cassette deck of TAPE 2 terminals.
2 ► 1:
To record (copy) from the cassette deck of TAPE 2 terminals, to the cassette deck of TAPE 1/DAT terminals.

④ INPUT SELECTOR switch

Use to select the playback source.
LINE:
For playback with a component connected to LINE terminal.
TUNER:
For AM or FM broadcast reception with a tuner.
PHONO:
For record playback with a turntable.
CD:
For compact disc playback with a CD player.
TAPE 1/DAT:
For playback with a cassette deck or digital audio cassette deck connected to TAPE 1/DAT terminals.
TAPE 2:
For playback with a cassette deck connected to TAPE 2 terminals.

⑤ VOLUME control

Use to adjust the volume level.

⑥ PHONES jack

When using headphones, insert the plug into this jack.

⑦ SPEAKERS selector switch

Use this switch to listen to the speaker systems connected to SPEAKERS terminals.
OFF:
Released position: No sound is heard from the speaker systems. Set to this position when listening with headphones.
A:
For reproduction of sound with the speaker system connected to the SPEAKERS A terminals.
B:
For reproduction of sound with the speaker system connected to the SPEAKERS B terminals.
A + B:
For reproduction of sound with the speaker systems connected to SPEAKERS A and B terminals.

⑧ BALANCE control

Should normally be left in the center position. Adjust balance if the sound is louder from one of the speakers. If the right side is louder, turn toward the L position and if the left side is louder, turn toward the R position.
NOTE:
This control does not operate when DIRECT switch is in the on position.

⑨ SUBSONIC filter switch/indicator (A-402 only)

Use this switch when playing records with coarse grooves.
On:
The indicator lights: In this position, frequencies of 17 Hz and below are cut, eliminating super-low-frequency noise caused by coarse record grooves, and thus helping prevent sound distortion.
Off:
The indicator goes off: Leave in this position for normal playback.
NOTE:
This switch does not operate when DIRECT switch is in the on position.

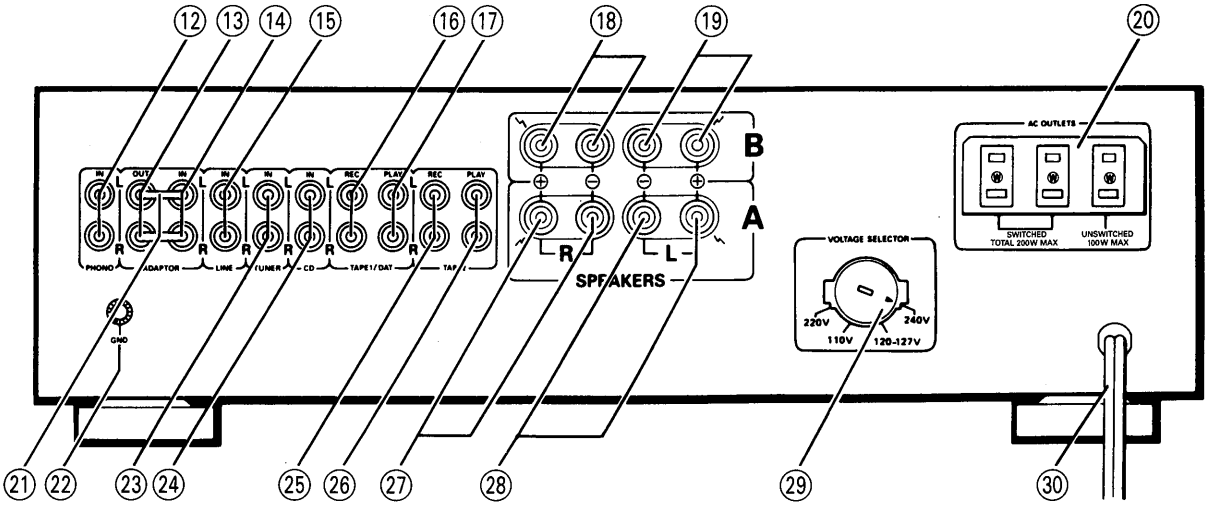
⑩ DIRECT switch/indicator

Use this switch/indicator when you do not wish to pass the output from input terminal equipment through the various frequency adjusting circuits (BASS, TREBLE, SUBSONIC (A-402 only)) and adaptor terminals (ADAPTOR).
On:
The indicator lights: The signals input through the input terminals are reproduced without passing through the various frequency adjusting circuits. This results in flat, pure sound which is a more faithful reproduction of the input source.
Off:
The indicator goes off: The signal passes through the various frequency adjusting circuits.

⑪ MUTING switch/indicator (A-402 only)

Use to temporarily cut sound volume.
On : The indicator lights.
The sound is cut off.
Off : The indicator goes off.
The sound will return to its previous volume.

[REAR PANEL]



⑫ PHONO terminals

⑬ ADAPTOR OUT terminals

⑭ ADAPTOR IN terminals

⑮ LINE terminals

⑯ TAPE 1/DAT REC terminals

⑰ TAPE 1/DAT PLAY terminals

⑱ SPEAKERS B terminals (right channel)

⑲ SPEAKERS B terminals (left channel)

⑳ AC OUTLETS (see page 7)

㉑ Shorting bars

㉒ Turntable ground terminal (GND)

㉓ TUNER terminals

㉔ CD terminals

㉕ TAPE 2 REC terminals

㉖ TAPE 2 PLAY terminals

㉗ SPEAKERS A terminals (right channel)

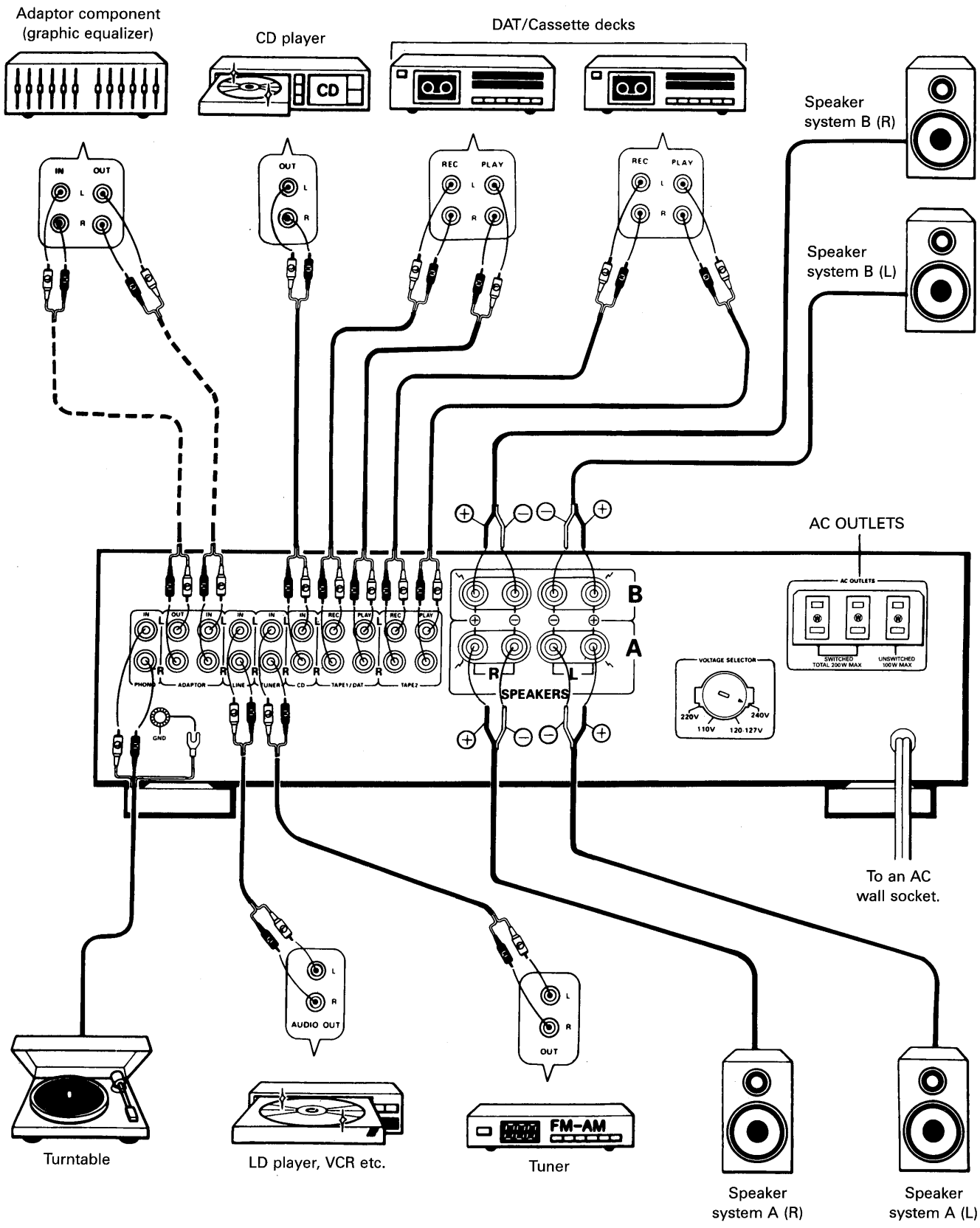
㉘ SPEAKERS A terminals (left channel)

㉙ VOLTAGE SELECTOR

㉚ Power cord

Connect this cord to an AC wall socket, or the AC outlet of an audio timer.

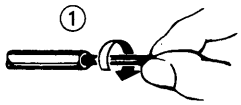
CONNECTIONS



See page 6 for Connections.

CONNECTING THE SPEAKER CORDS

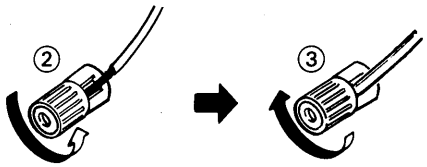
1. Strip off the vinyl covering and twist the tip of the wire core.



Twist the wire core.

2. Loosen the knob and insert the wire core into the terminal hole.

3. Tighten the knob to fix the wire core in place.



NOTE:

Do not allow the wire core to protrude and touch other terminals or wires. If the cores of different wires touch, damage may result to your amplifier and/or speaker systems.

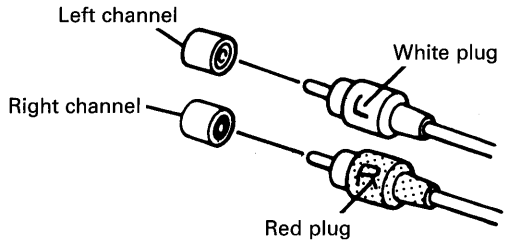
Speaker Impedance

When speaker systems are connected to only SPEAKERS A or SPEAKERS B terminals, such speakers should have rated impedance in the range of 4—16 Ω.

When speakers are connected to both the A and B terminals, they should have a rated impedance in the range of 8—32 Ω.

CONNECTING THE INPUT/OUTPUT CORDS

Connect the white plug to the L (left) side, and the red plug to the R (right) side. Be sure to insert the plugs securely.



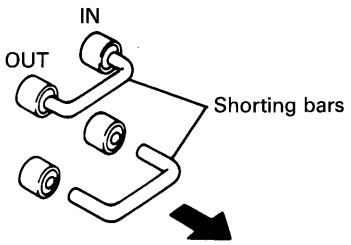
The INPUT/OUTPUT jacks of this unit are dull tinplated, for high audio quality.

Turn off the power before connecting or disconnecting plugs.

TO USE THE COMPONENT CONNECTED TO THE ADAPTOR TERMINALS

1. Set POWER switch to OFF.

2. Remove the two shorting bars from ADAPTOR terminals.



NOTE:

Remove the shorting bars before connecting an equalizer to these terminals. Always keep the bars inserted while the terminals are not in use, and take care not to lose them.

AC OUTLETS (SWITCHED)

Power supplied through these outlets is turned on and off by the amplifier's POWER switch. Total electrical power consumption of connected equipment should not exceed 200 W.

AC OUTLET (UNSWITCHED)

Power flows continuously to this outlet, regardless of whether the amplifier is switched on or off. Electrical power consumption of the connected equipment should not exceed 100 W.

The equipment should be disconnected by removing the power plug from the wall socket when not in regular use, e.g., when on vacation.

NOTE:

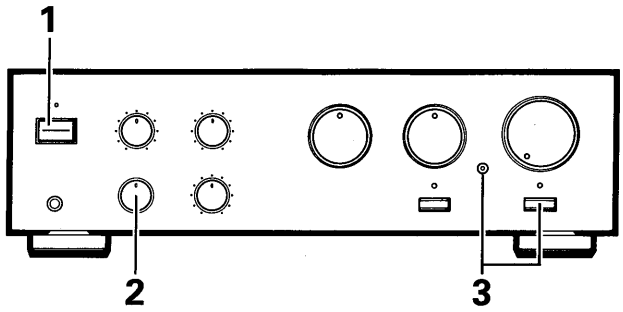
Do not connect appliances with high power consumption such as heaters, irons, or television sets to the AC OUTLETS in order to avoid overheating or fire risk.

OPERATIONS

The illustration shows model A-402.

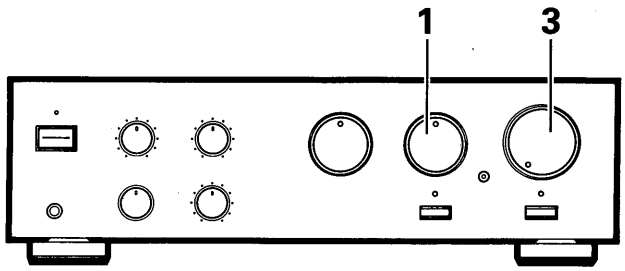
BEFORE BEGINNING OPERATIONS

1. **Set POWER switch to ON.**
2. **Set the SPEAKERS switch to A, B, or A + B.**
3. **Set DIRECT switch and MUTING switch to OFF (A-402 only).**



PLAYBACK PROCEDURES

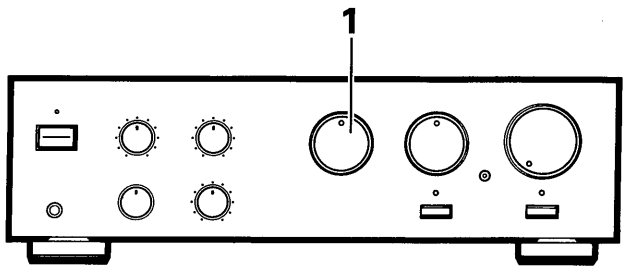
1. **Set INPUT SELECTOR switch to the desired playback source.**
   - For playback with the equipment connected to LINE terminals: Set to [LINE].
   - For reception of an AM/FM broadcast: Set to [TUNER].
   - For playback of a record: Set to [PHONO].
   - For playback of a compact disc: Set to [CD].
   - For playback of a tape: Set to [TAPE 1/DAT] or [TAPE 2].
2. **Operate the equipment to begin playback.**
3. **Adjust playback volume with VOLUME control on this unit.**



RECORDING TAPES

1. **Select the recording equipment with REC SELECTOR switch.**
   - When set to SOURCE, the signals from the device connected to the terminals of the selected input are recorded. (To record signals from the device connected to PHONO or LINE terminals, for instance set REC SELECTOR switch to SOURCE and set INPUT SELECTOR switch to PHONO or LINE accordingly.)
   - Recording is impossible when the switch is set to OFF.
   - When REC SELECTOR switch is set to a position other than SOURCE or OFF, the equipment selected by REC SELECTOR switch can be recorded from, irrespective of the settings of INPUT SELECTOR or DIRECT switches.
2. **Begin recording by operating the recording equipment.**

   Refer to the operating instructions of your cassette deck for proper operating procedures.



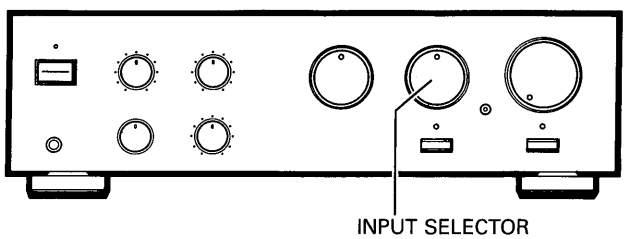
MONITOR WHILE OPERATING

On a 3-head cassette deck, sound can be concurrently heard while recording on tape. This operation of checking the sound quality and recording level is called "monitoring". For monitoring, INPUT SELECTOR switch of this unit must be set to the cassette deck on which recording is being done.

- When recording with the cassette deck connected to TAPE 1/DAT terminals: Set to TAPE 1/DAT.
- When recording with the cassette deck connected to TAPE 2 terminals: Set to TAPE 2.

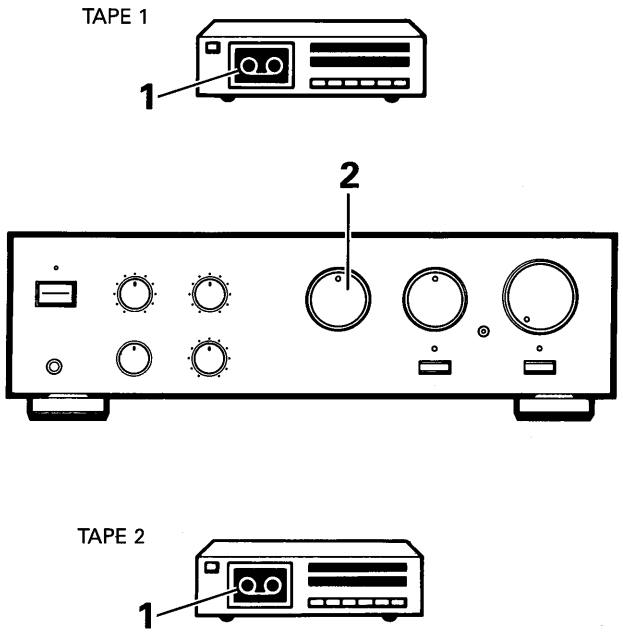
NOTE:

When recording from PHONO or LINE source, recording monitor is not possible.



COPYING TAPES

When two decks are used, you can record the sounds from one deck onto the other.



Application examples:

- To make a tape copy with contents identical to the original tape.
- To edit a recording of an FM broadcast in order to cut out unwanted commercials, recording only desired material onto another tape.

When using two cassette decks

1. Load tapes for playback (pre-recorded tape) and recording (blank tape) into the respective cassette decks.

2. Select the copying direction with REC SELECTOR switch.

- When copying from the cassette deck of TAPE 1/DAT terminals to the cassette deck of TAPE 2 terminals: Set to 1 ► 2.
- When copying from the cassette deck of TAPE 2 terminals to the cassette deck of TAPE 1/DAT terminals: Set to 2 ► 1.

NOTE:

The tape input selected with REC SELECTOR switch can be copied, regardless of the settings of INPUT SELECTOR and DIRECT switches.

3. Operate the cassette decks to begin copying.

Set the cassette deck with the pre-recorded tape to the playback mode. Set the cassette deck with the blank tape to the recording mode, and set the cassette deck with the pre-recorded tape to the playback mode.

Playback using a graphic equalizer

The sound of all sources can be finely adjusted with a graphic equalizer connected to ADAPTOR terminals.
However, the graphic equalizer is bypassed when DIRECT switch is on.

NOTE:

Be sure to perform this operation with the adaptor component power switch in the on position. Even when not using the adaptor component, its power switch must be left on. If the adaptor component is switched off, no sound will be produced, or the playback sound will be distorted.

TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used. If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Cause	Remedy
No power supplied to unit.	• Power plug is disconnected from outlet. • The component power plug has been plugged into another component power outlet (e.g. timer, etc.) but power to that unit is disconnected.	• Insert plug securely into outlet. • Turn on power to the other component.
No sound.	• Connecting cords are disconnected from terminals, or connected incorrectly. • Both the shorting bars are disconnected from ADAPTOR terminals, and the DIRECT switch is set to OFF. • Terminals, or connecting cords pin plugs are dirty. • INPUT SELECTOR switch is not set to the desired input source. • Operation of other components is incorrect. • The SPEAKERS selector switch is set to "OFF". • MUTING switch is in the on position (the indicator is lit). (A-402 only)	• Connect securely. • Connect the shorting bars securely. • Clean terminals and plugs. • Set the switch correctly (PHONO, TUNER, CD, LINE, TAPE 1/DAT, TAPE 2). • Consult the operating instructions for the other components. • Set the switch to "A", "B", or "A + B". • Set MUTING switch to the off position (the indicator goes off).
No sound from one speaker.	• Connecting cords or speaker cords are disconnected on that side. • BALANCE control has been adjusted to one side.	• Connect securely. • Adjust BALANCE control to center position.
Cannot record tapes.	• The position of REC SELECTOR switch is incorrect. • Connections are incorrect. • Operation of cassette deck is incorrect.	• Set switch correctly (See section "RECORDING TAPES"). • Reconnect properly. • Consult the operating instructions of the cassette deck.
Cannot perform tape copying.	• The position of REC SELECTOR switch is incorrect. • Operation of cassette decks are incorrect.	• Set switch correctly (See section "COPYING TAPES"). • Consult the operating instructions of the cassette decks.

SPECIFICATIONS

[A-402]

Amplifier Section

Continuously Average Power Output is 60 Watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz, with no more than 0.009 %** total harmonic distortion.**

Continuous power output (both channels driven at 20 Hz to 20 kHz)**
T.H.D. 0.009 %, 8 Ω ..... 60 W + 60 W*
T.H.D. 0.02 %, 4 Ω ..... 80 W + 80 W*
Dynamic power output (on EIA dynamic test signal)
8 Ω/4 Ω/2 Ω ..... 75 W/110 W/150 W
Total harmonic distortion **
20 Hz to 20 kHz, 60 W, 8 Ω ..... 0.009 %*
20 Hz to 20 kHz, 80 W, 4 Ω ..... 0.02 %*
Input sensitivity/impedance
PHONO (MM) ..... 2.5 mV/50 kΩ
CD, TUNER, LINE, TAPE ..... 150 mV/40 kΩ
PHONO overload level
1 kHz, T.H.D. 0.008 % (MM) ..... 150 mV
Output level/impedance
TAPE REC, ADAPTOR OUTPUT ..... 150 mV/1 kΩ
Frequency response
PHONO (MM) ..... 20 Hz to 20 kHz ±0.3 dB
CD, TUNER, LINE, TAPE ..... 5 Hz to 100 kHz $^{+0}_{-3}$ dB*
Tone control (volume control set at −30 dB position)
BASS ..... ±8 dB (100 Hz)
TREBLE ..... ±8 dB (10 kHz)
Filter (SUBSONIC) ..... 17 Hz (12 dB/oct.)
Signal-to-Noise ratio (IHF short circuit, A network)
PHONO (MM, 5 mV input) ..... 93 dB*
CD, TUNER, LINE, TAPE ..... 108 dB*

Power Supply/Miscellaneous

Power Requirements ..... AC 110 V/120—127 V/220 V/240 V (Switchable), 50/60 Hz
Power Consumption ..... 550 W
AC outlets
switched (x 2) ..... 200 W
unswitched (x 1) ..... 100 W
Dimensions ..... 420 (W) x 347 (D) x 126 (H) mm
Weight (without package) ..... 8.1 kg

Accessories

Operating instructions 1

NOTE:
Specifications and design are subject to possible modifications without notice, due to improvements.

*Measured with DIRECT switch set to on.
**Measured by Audio Spectrum Analyzer.
***Measured pursuant to the Federal Trade Commission's Trade Regulation rules on Power Output Claims for Amplifiers.

[A-302]

Amplifier Section

Continuously Average Power Output is 40 Watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz, with no more than 0.01 %** total harmonic distortion.**

Continuous power output (both channels driven at 20 Hz to 20 kHz)**
T.H.D. 0.01 %, 8 Ω ..... 40 W + 40 W*
T.H.D. 0.02 %, 4 Ω ..... 50 W + 50 W*
Dynamic power output (on EIA dynamic test signal)
8 Ω/4 Ω/2 Ω ..... 55 W/90 W/100 W
Total harmonic distortion **
20 Hz to 20 kHz, 40 W, 8 Ω ..... 0.01 %*
20 Hz to 20 kHz, 50 W, 4 Ω ..... 0.02 %*
Input sensitivity/impedance
PHONO (MM) ..... 2.5 mV/50 kΩ
CD, TUNER, LINE, TAPE ..... 150 mV/40 kΩ
PHONO overload level
1 kHz, T.H.D. 0.02 % (MM) ..... 150 mV
Output level/impedance
TAPE REC, ADAPTOR OUTPUT ..... 150 mV/1 kΩ
Frequency response
PHONO (MM) ..... 20 Hz to 20 kHz ±0.3 dB
CD, TUNER, LINE, TAPE ..... 5 Hz to 100 kHz $^{+0}_{-3}$ dB*
Tone control (volume control set at −30 dB position)
BASS ..... ±8 dB (100 Hz)
TREBLE ..... ±8 dB (10 kHz)
Signal-to-Noise ratio (IHF short circuit, A network)
PHONO (MM, 5 mV input) ..... 89 dB*
CD, TUNER, LINE, TAPE ..... 108 dB*

Power Supply/Miscellaneous

Power Requirements ..... AC 110 V/120—127 V/220 V/240 V (Switchable), 50/60 Hz
Power Consumption ..... 410 W
AC outlets
Switched (x 2) ..... 200 W
Unswitched (x 1) ..... 100 W
Dimensions ..... 420 (W) x 347 (D) x 126 (H) mm
Weight (without package) ..... 6.9 kg

Accessories

Operating instructions 1

NOTE:
Specifications and design are subject to possible modifications without notice, due to improvements.

*Measured with DIRECT switch set to on.
**Measured by Audio Spectrum Analyzer.
***Measured pursuant to the Federal Trade Commission's Trade Regulation rules on Power Output Claims for Amplifiers.

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